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(THE)
Grafted Vrooman
Franquette Walnut

How to Plant It
How to Grow It

A TREATISE ON WALNUT CULTURE
AND THE COMMERCIAL
FILBERT AND ITS CULTURE

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CARLTON, OREGON

The English Walnut

ITS CULTURE—In the Northwest the walnut is found scattered over a wide area, and is too well known to require a full description in detail relative to its adaptability to soils, locations, etc., for there are now bearing walnut trees, found located over a wide territory, which demonstrates as to what it will do, and where it will thrive, and those interested in its culture can avail themselves of the facts by personal observation of trees now in bearing. Horticultural reports have taken up all sides of walnut culture, which most planters are familiar with.

WHAT VARIETY OF WALNUT?—After 16 years of experience in handling and growing walnuts, we have discarded all varieties except the Franquette. This variety we have selected as the best type of walnut to grow commercially in the Northwest, as being the best yielder, best quality, and most hardy tree. The majority of all other nurserymen and planters are now practically growing only the Franquette.

WHAT SOIL TO PLANT IN—What is true of other commercial fruit trees of the Northwest is also true of the walnut. They do best in well-drained soil, clay loam and mellow soil of the Valley prairie, upland hills, and lower land, where the soil has good texture and good drainage. The most important thing to keep in view is, to avoid soggy soil and all white land.

WHAT DISTANCE TO PLANT—This is a matter of choice, left to the planter, as many successful walnut planters vary on this.

It is a matter to be decided by each individual planter. Plantings are being made from 30 to 60 feet apart, but probably the best and most used distance, where walnuts are set alone and without fillers, is 40x40 feet.

WHAT ARE FILLERS?—When planting a walnut orchard, owing to the fact that they are large growers, and require plenty of room when in full bearing, the planter must arrange his distance so that when walnuts are large they will have sufficient room to take care of themselves; and this means the walnuts require a greater distance than any other fruit trees.

To make the land work to full capacity while the walnuts are coming into bearing, on a paying basis, it is policy to plant a filler, and where location, soil, etc., are suited, the prune is ideal, being a compact grower. Where using a tree filler, such as prunes, the distance is a matter of choice with the individual planter, but 20x20 feet is preferred, and every third tree a walnut, this giving you 12 walnuts and 96 prunes to the acre. Another distance is 25x25 feet, and every second tree a walnut, making a total of 69 trees to the acre—52 prunes and 17 walnuts. The different distances can be figured by the planter, he considering his individual interest. In the meantime while the walnuts are coming into full bearing, and do not require all the land, the filler will enable the planter to get a number of good paying crops before the walnuts require the room of the fillers. At that time, when walnuts require more room, the filler trees can be removed in part or all, and the planter has realized good money by doing this.

WHAT CROPS TO GROW BETWEEN ROWS—To bring in a revenue, while the or-

chard is young and a non-producer, intercropping can be practised with walnuts, where planted alone, and as well where planted with prunes as a filler, or other compact growing fillers. Any cultivated crop can be grown for 4 years at least, and in some cases longer, such as potatoes, berries, beans corn, strawberries, etc. In using a cultivated crop, your orchard is properly worked, which is very necessary to trees, and at the same time it is paying to you, and you are not at an expense, such as clean cultivation would entail, where no crops were grown. At the time that the orchard begins to bear, or has produced a good growth, all intercropping should be stopped, and clean cultivation given to the orchard.

HOW ABOUT CULTIVATION?—Walnuts should the same as all other fruit trees, receive the necessary cultivation; either clean cultivation should be given, or intercropping practised. Uncultivated crops, such as grain, hay, etc., can be grown, by leaving a strip of several feet along each side of tree rows, and the same to be kept cultivated. We, however, do not recommend this; they will do well, yet not so well as where the entire ground is worked; for in this country, it is very necessary that we conserve all moisture possible for the benefit of the orchard.

WILL WALNUTS BE STAPLE?—Walnuts are a staple commodity, non-perishable, and every indication leads one to believe that, as the production increases, the market and demand will increase.

The following table, recently issued by the department of agriculture, gives the comparative food values for four leading articles of diet, namely: walnuts, beefsteak, Irish potatoes and wheat flour:

	Water	Protein	Fat	Carbohy- drates
Walnuts	2.8	16.7	64.4	14.8
Irish Potatoes	78.3	2.2	.1	18.4
Beefsteak	61.9	18.9	18.5	00.0
Wheat Flour	12.8	10.8	1.1	74.8

California produces in walnuts, each year, about \$12,000,000.00. Just think of a great industry like this being built up in the last few years. The following is a list of imports of walnuts into the United States in year 1917: Shelled walnuts, 13,058,518 pounds. Unshelled walnuts, 25,666,844 pounds.

HOW TO PLANT—In setting walnuts, the hole should be dug roomy enough to receive roots, without crowding, and should be set about two inches deeper than what they stood in the nursery row. Top soil should be put in first and the dirt gently firmed as it is being put in (do not ram nor pound dirt in), and see that roots are imbedded in a natural way, and not crowded. We contend that a hole made good and roomy, enough so to receive the tree in good shape without crowding, is better than a great hole; for we believe that, by having the hole right in size, trees make a better start the first year, and are not so liable to dry out. In pruning the roots when setting, they should be given each one a clean cut at ends with a sharp knife; this also applies to tap root. When setting walnuts in the spring, it is well to turn a bucket of water around the tree, after being set; this will settle the soil around the roots. There is nothing technical about setting trees; only necessary to use good judgment.

TIME OF PLANTING—Walnuts can be set, beginning in the fall and throughout the winter and on up to spring, this being true also of all trees. Fall setting is preferred,

for the reason that in setting in the fall, they get started off with a root system as spring opens up, and in setting in the spring they have to make this root system, before they can start; and if it should happen that we had a dry season, the fall planting will not suffer, as those set in the spring.

WHO ARE PLANTING—All classes of people are planting walnuts—farmers, land owners, orchardists, professional and business men. Business men say they are planting walnuts, because nature will produce them an income, regardless of the ups and downs and fluctuations of business activities, such as business lines are subject to, thus eliminating the business worry which goes with business.

WHAT VARIETIES WERE PLANTED AT FIRST—Owing to being inexperienced at first, when the first few scattering trees were planted, and also when the first commercial walnut orchards were set, many mistakes were made, in planting a large list of varieties, many of which were the early kinds, which started growth early in season and were caught by frost, and others which were too late in coming out, making the season too short for maturing the crop; and one of the biggest mistakes, in setting seedling walnuts, which were not uniform in yield nor in time of coming out. But it is due to all these mistakes, and blunders that the walnut industry was shown up in its right light, for a certain per cent of these early plantings were found to be wonderful producers—uniform early cropping, and of best quality, which positively proved to us if one started off with the right kind and varieties, that walnut orchards commercially would be real money-makers—as much so and even surpassing other standard commercial fruits. Therefore the only

thing to do was to make selections, and use only the kind or variety which would come into bearing at an early age, and increase their production with age.

These drawbacks have been overcome, by grafting by selection. Propagators have gone out into bearing walnut orchards and selected, among many trees, the most choice ones, have taken their scions from these trees and produced grafted trees which will reproduce as to the parent. Therefore all waste in the way of tender, early and non-producing trees is corrected, by grafting from selected and tried-out trees.

SOURCE OF SCION WOOD—Scion wood used to work the walnut with is selected from the best strain of Vrooman Franquette, and Franquette trees with bearing and quality records.

WHAT ROOTS ARE WALNUTS WORKED ON—The Franquette is grafted on the California Black root, which seems to be the best of all for making good growth and union of graft. Occasionally the American Black is used, but the California Black is preferred, and mostly used.

WHAT ABOUT THE ROOT SYSTEM?—When walnuts were first being set commercially, it was thought that it was absolutely necessary that the entire tap root be planted, but since, through demonstrations and experience, it is found that it is not necessary that the full tap root be planted, but that the small end of the same be cut off, and that tree will do as well, if not better than where full tap has been set.

On walnuts transplanted with pruned tap roots, it has been demonstrated that they do perfectly, and it is contended by experienced

growers that they do better than when set without pruning.

WHERE ARE WALNUTS PLANTED?—

Plantings of walnuts commercially are being made in western Oregon, parts of Washington and California. No doubt all who are interested in walnuts are familiar with reports which have come out as to where walnuts are now in bearing.

HOW ARE WALNUTS HARVESTED?—

As the nuts get ripe, the hulls split and drop to the ground, which are then gathered and prepared for the market.

WHAT DO WALNUTS YIELD?—It is a little too early to be able to tell just what walnuts will yield, for the reason that commercial plantings are just coming into bearing, and growers who could give authentic figures on yield have neglected to keep records of such trees as are in bearing. But there are many growers who have had, and now have walnuts in bearing, who could give interesting figures on yields, if they would only keep records of their bearing trees.

We give a few yields of record, given by walnut growers: An orchard 11 years old produced 20 pounds of nuts per tree; an orchard of 6-year-old trees produced 5 pounds of nuts per tree; 15 walnut trees 8 years old bore on an average 40 pounds of nuts per tree; 6 walnut trees 9 years old bore 60 pounds of nuts per tree.

It is estimated that walnuts from 10 to 12 years old should produce from 20 to 30 pounds of nuts per tree, and that this should be doubled when trees are four or five years older. Of course, soil conditions, cultivation and methods of handling will make production vary, and a good deal depends on the individual, etc.

In the above statements regarding walnut yields, these refer mostly to grafted trees. Grafted walnuts, when given proper care, start bearing at an early age, even as early as prunes, etc., but of course these young trees do not start heavy, but they increase their yields with age, and from eight years old and up they become income makers, and increase their production faster as they become older.

"We know of walnut trees in northern California that have produced 712 pounds of nuts in a single year." "It is not uncommon to hear of trees producing more than 200 pounds of nuts."

HOW WALNUTS ARE PRUNED—There is a difference of opinion with many successful walnut growers as to methods of pruning, and this is mostly to be worked out by each individual planter, for the reason that one planter will start out with his system, and the other planter will use his method of trimming, and in the end all will finish up with a good formed head or top, the only difference being, that several growers have used their own system of pruning.

The most used and popular style of pruning, up to recently, has been to start a high head, around six feet and higher. Another system of pruning is to cut the tree, when set out, around and under two feet high, but in cutting low, be sure that you have a sufficient number of good buds left to start trees off. After a tree is cut back, the several buds which you have left will start out; let them grow until they are far enough along for you to determine which one will be the best and strongest; then take off all of them, leaving this selected one, to grow up and make your tree. In the meantime set a stake by the tree to train this new branch to, and the

second spring cut back to say four feet, or higher as you wish.

The height to start walnut head, and system of forming, should be left up to the planter, he to make his selection from the several systems, for it is up to him to make his own orchard, and each one has his own way of getting at the same results.

After fifteen years of watching and observing the growth of walnuts, and their production, our firm belief and opinion is, that walnuts started with a medium low head, about four feet high or a little less, are far superior to those headed high. This lower system of starting the walnut head seems to make a stronger growing tree, better producer, and in fact a better tree all around. Trees so headed, and now growing and bearing up to 20 years old, will prove this to those who take the time to look this up. Of course, in starting the head at this height, it will require the right kind of handling to form the tree head above and out of the way of cultivation, but this can be easily done by taking off the necessary downward hanging branches, and let those remain which are growing up and out of the way, to form top and if rightly handled you will find that your trees will be as easily worked around as those which are started with an extra high head.

In the early stage of forming the walnut head, those limbs which will be used to form the base, or trunk of head; if some of these are drooping, they can be tied up for awhile, and they will soon grow rigid, thus making you an upright head. We have had years of experience in trimming and handling fruit trees, and will say that the first few years' life of all trees is the most critical time of their life, and this is the most important time, to get your trees started off, and to get them started off right; and to force quick and early

growth, is is necessary to do it by cultivating and pruning. The necessary amount of trimming which should be done to trees acts as a stimulant, and is a great factor in the early life of the tree. While the walnut does not require as much pruning as other fruit trees, yet they will respond quickly to the necessary amount of pruning, over those which have been let grow up by nature.

The trimming and pruning of walnuts is only required during the first period of their growth, and it is done mostly by heading back, in getting the head or top. After the head of a walnut is well formed, nature then takes care of it, and it requires only a limited amount of pruning, mostly in the way of taking off branches which are in way of cultivation.

PRICES ON GRAFTED FRANQUETTE

	Each	per 10	per 100
6 to 8 ft....	\$2.00	\$17.50	\$150.00
4 to 6 ft....	1.75	15.00	125.00
3 to 4 ft....	1.50	12.50	100.00

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Layered Filberts

FILBERTS AS A COMMERCIAL INDUSTRY

In western Oregon and parts of Washington and California, commercial plantings of filberts are being made, and some of these plantings are now in bearing. Filbert orchards now in bearing are producing crops of finest nuts, in quality and quantity, which indicates that we have the climate and soil to make commercial filbert growing a success.

Filberts now in bearing are scattered over a wide area, and demonstrate for themselves where they will thrive and produce commercially, as well for family use.

Commercial interests have recently taken up the growing of filberts, due to the success of the filbert as a paying crop.

We expect to have in the near future records giving the yields on filberts, which would be interesting to intending planters.

Filberts thrive in a rich loam, clay loam and quite heavy clay soils, and are not so particular as regards soils. They are always more vigorous in rich land than in poor land. A light loam with dry subsoil will give the least wood and most nuts. A very rich soil with lots of moisture will give an excessive wood growth, at expense of the nut crop.

The filbert will adapt itself to a greater variety of soils than other nuts and fruits. The filbert reaches a height of from 10 to 30 feet.

The most popular way to train filberts is in a tree form, starting the head rather low; another way is to grow them in a clump; but the tree form is preferred.

Cultivation should be given filberts the first two or three years, and cultivated crops can be grown between the rows. Filberts should be planted 10, 12 or 14 feet apart and the rows should be 15 or 16 feet apart. Probably 14 feet apart in rows will be preferred; this distance will however be regulated by soil conditions.

The fifth and sixth year after planting, filberts are reported to produce from three to six pounds of nuts each; and figuring the average plant of 240 trees to the acre and three pounds to the tree, making 720 pounds to the acre, at 30 cents, this would make \$216 per acre from crop. The following is a list of Imports on Filberts into the United States in year 1917. Shelled Filberts, 2,058,732 pounds. Unshelled filberts, 11,181,301 pounds.

In varieties, we offer nothing only the best commercial sorts, of fine quality, best of croppers and hardy. Filberts which we are offering are propagated mostly by layers; which means that this system gives the same results as grafted, as they reproduce as to parent, and any sprout which may be left to grow up from roots or crown carries the individual variety and strain, and layered filberts reproducing from roots and crown,

PRICES ON BEST OF COMMERCIAL SORTS

	Each	per 10	per 100
3 to 4 ft....	75c	\$6.00	\$55.00
2 to 3 ft....	60c	5.00	45.00
1 to 2 ft....	40c	3.50	30.00

COMMERCIAL VARIETIES

Barcelona	DuChilly	English
Kentish Cob	White Avelina	

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